REMARKS

This Amendment is submitted in response to the final Office Action mailed on August 20, 2008. No fee is due in connection with this Amendment. The Director is authorized to charge any fees which may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 112857-458 on the account statement.

Claims 20-40 are pending in this application. Claims 22-38 were previously withdrawn from consideration and Claims 1-19 were previously canceled without prejudice or disclaimer. In the Office Action, Claims 20-21 and 39-40 are rejected under 35 U.S.C. §112. Claim 20 is further rejected under 35 U.S.C. §102. Claim 21 is further rejected under 35 U.S.C. §103. In response, Claim 20 has been amended. This amendment does not add new matter. At least in view of the amendment and/or for the reasons set forth below, Applicants respectfully submit that the rejections should be withdrawn.

In the Office Action, Claims 20-21 and 39-40 are rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. The Patent Office asserts that the limitation "substantially planar" in Claim 20 is not supported by the original disclosure. See, Office Action, page 3, lines 1-5. In response, Applicants have amended Claim 20 to remove the limitation "substantially planar" and add the limitation "wherein the first hydrogen flow path or chamber is simultaneously in contact with: (i) a proton conductor membrane electrode assembly on a first side; and (ii) the moisture carrier on an opposite side." This amendment does not add new matter. The amendment is supported in the Specification, for example, at page 3, paragraph 22, lines 6-9; paragraph 30, lines 8-11; page 4, paragraph 41, lines 1-20; page 11, paragraph 138, lines 7-13; page 13, paragraph 151, lines 1-6; paragraph 152, lines 1-12; paragraphs 155-158; page 14, paragraph 161, lines 1-7; paragraph 165; Figs. 1, 6 and 9. Applicants respectfully submit that currently amended Claim 20 is supported in the original disclosure. Thus, Applicants respectfully submit that Claims 20-21 comply with the written description requirement.

The Patent Office further asserts that Claims 39-40 are not supported by the original disclosure because paragraph 159 of the Specification discloses that no voltage is applied for humidity control when a moisture carrier is used. See, Office Action, page 3, lines 6-7. Paragraph 159 states that "[b]y using a moisture carrier instead of the proton conductor. . . , the

humidity of the fuel gas can be controlled. *In this case*, no voltage is applied to the moisture carrier." See, Specification, pages 13-14, paragraph 159, lines 1-4 (emphasis added). However, the cited portion of the Specification is merely reciting one embodiment of the invention; the Specification does not recite that voltage may never be applied when a moisture carrier is used. As such, the claims are not unambiguously limited to the single embodiment cited by the Patent Office. See, *Cordis Corp. v. Medtronic AVE, Inc.*, 339 F.3d 1352, 1365 (Fed. Cir. 2003) ("In the present case, the entirety of the specification does not reflect that the invention goes to the narrower scope of a mixture of half and complete slots. Such a mixture was not conveyed as critical to the invention nor was it described as the only feasible design in the disclosure. Rather, as in *Johnson Worldwide Associates, Inc. v. Zebco Corp.*, 175 F.3d 985, 993 (Fed. Cir. 1999), 'the patent disclosure provides ample support for the breadth of the term; it does not unambiguously limit the meaning of the term' to the narrower embodiment").

Furthermore, even if the claims were limited to not applying voltage when a moisture carrier is used, the electrodes may still be included on the apparatus of Claim 39. Claim 39 is an apparatus claim, not a method claim. As such limitations on the use of the apparatus disclosed in the Specification cannot limit the claimed structure. In fact, paragraph 159 involves an embodiment of the present claims corresponding to Figure 6. See, Specification, pages 13-14, paragraphs 155-159. Paragraph 153 specifically discloses that in Figure 6, first and second application electrodes are formed on catalysts 85 and 86. See, Specification, page 13, paragraph 153, lines 6-12. Although paragraph 159 discloses that in one case, no voltage is applied to the moisture carrier, paragraph 159 never discloses that the first and second application electrodes cannot be formed on the apparatus. See, Specification, pages 13-14, paragraph 159, lines 1-4. Therefore, Applicants respectfully submit that Claims 39-40 are fully supported in the disclosure.

Accordingly, Applicants respectfully request that the rejection of Claims 20-21 and 39-40 under 35 U.S.C. §112, first paragraph, be withdrawn.

In the Office Action, Claim 20 is rejected under 35 U.S.C. §102(b) as being anticipated by JP 06-130238 to Yasutaka ("*Yasutaka*"). In response, Claim 20 has been amended. In view of the amendment and/or for at least the reasons set forth below, Applicants respectfully submit that *Yasutaka* fails to disclose or suggest each and every element of independent Claim 20.

Currently amended independent Claim 20 recites, in part, a hydrogen gas humidity control apparatus, comprising: a first hydrogen flow path or chamber thereof to which at least

hydrogen gas is supplied; a second hydrogen flow path or chamber thereof to which at least hydrogen gas is supplied; and a moisture carrier for separating the first hydrogen flow path or chamber thereof from the second hydrogen flow path or chamber thereof and for allowing at least one of water and water vapor to pass therethrough, wherein the first hydrogen flow path or chamber is simultaneously in contact with: (i) a proton conductor membrane electrode assembly on a first side; and (ii) the moisture carrier on an opposite side. This amendment does not add new matter. The amendment is supported in the Specification at, for example, page 3, paragraph 22, lines 6-9; paragraph 30, lines 8-11; page 4, paragraph 41, lines 1-20; page 11, paragraph 138, lines 7-13; page 13, paragraph 151, lines 1-6; paragraph 152, lines 1-12; paragraphs 155-158; page 14, paragraph 161, lines 1-7; paragraph 165; Figs. 1, 6 and 9. In contrast, *Yasutaka* fails to disclose every element of Claim 20.

For example, *Yasutaka* fails to disclose or suggest a hydrogen gas humidity control apparatus comprising a moisture carrier for separating a first hydrogen flow path or chamber thereof from a second hydrogen flow path or chamber, wherein the first hydrogen flow path or chamber is simultaneously in contact with: (i) a proton conductor membrane electrode assembly on a first side; and (ii) the moisture carrier on an opposite side as recited, in part, by independent Claim 20. *Yasutaka* is entirely directed to a humidification apparatus which utilizes a steam transparency film to humidify inlet fuel gas to a proton conductor membrane with off-gas hydrogen discharged from the proton conductor membrane. See, *Yasutaka*, paragraph 8, lines 3-14; paragraph 10, lines 1-9; paragraph 14, lines 1-14; Drawing 1. In the humidification apparatus of *Yasutaka*, both the inlet fuel gas and off-gas hydrogen streams are only in contact with the steam transparency film. See, *Yasutaka*, Drawing 1. Nowhere does *Yasutaka* disclose or suggest that either hydrogen flow path is simultaneously in contact with a proton conductor membrane electrode assembly, nor does the Patent Office cite support for such claimed element.

In fact, because *Yasutaka* is entirely directed to humidifying the inlet reactant gas with off-gas hydrogen after it has been discharged from the proton conductor membrane, *Yasutaka* would not suggest to one of ordinary skill in the art that either of its hydrogen flow paths is simultaneously in contact with the proton conductor membrane. See, *Yasutaka*, paragraph 14, lines 1-14; Drawing 1. For example, *Yasutaka* discloses that by humidifying the inlet fuel gas with the moisture-containing off-gas after it has been discharged from the proton conductor membrane, the water generated in the fuel cell can be recycled. See, *Yasutaka*, paragraph 15,

lines 19-23. Unlike the humidity control apparatus of the present claims, the humidification equipment of *Yasutaka* is not integrated into the fuel cell and instead merely recycles the water formed in the fuel cell by using a steam transparency film to pass water contained in the off-gas to the inlet reactant gas. See, *Yasutaka*, Drawing 1. Therefore, *Yasutaka* fails to disclose or suggest a hydrogen gas humidity control apparatus comprising a moisture carrier for separating a first hydrogen flow path or chamber thereof from a second hydrogen flow path or chamber, wherein the first hydrogen flow path or chamber is simultaneously in contact with: (i) a proton conductor membrane electrode assembly on a first side; and (ii) the moisture carrier on an opposite side as required, in part, by the present claims.

In the Office Action, Claim 21 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Yasutaka* in view of U.S. Patent Application No. 2001/0031386 A1 to Sugawara ("*Sugawara*"). Applicants respectfully submit that *Sugawara* fails to disclose or suggest each and every element of Claim 21.

As discussed previously, *Yasutaka* fails to disclose or suggest a hydrogen gas humidity control apparatus comprising a moisture carrier for separating a first hydrogen flow path or chamber thereof from a second hydrogen flow path or chamber, wherein the first hydrogen flow path or chamber is simultaneously in contact with: (i) a proton conductor membrane electrode assembly on a first side; and (ii) the moisture carrier on an opposite side as required, in part, by independent Claim 20 from which Claim 21 depends. The Examiner relies on *Sugawara* merely as support for utilizing hydrogen generated by fuel reforming for a fuel gas as required, in part, by Claim 21. See, Office Action, page 5, lines 1-8. Thus, Applicants respectfully submit that *Sugawara* fails to remedy the deficiencies of *Yasutaka* with respect to the present claims.

Accordingly, Applicants respectfully request that the rejection of Claim 21 under 35 U.S.C. §103(a) to *Yasutaka* in view of *Sugawara* be withdrawn.

Applicants also respectfully submit that the subject matter as defined in Claims 39-40 is patentable over the cited art for at least substantially the same reasons as discussed above.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

Respectfully submitted,

BELL, BOYD & LLOYD LLP

BY _____

Thomas C. Basso
Reg. No. 46,541
Customer No. 29175

Date: November 19, 2008